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NASA Procedural Requirements

COMPLIANCE IS MANDATORY**NPR 8553.1A**Effective Date: March 22,
2005Expiration Date: March 22,
2010[Printable Format \(PDF\)](#)

Subject: NASA Environmental Management System (EMS) w/Change 2 (04/26/2006)**Responsible Office: Environmental Management Division**

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APPENDIX Z. Part 2. NASA Environmental Management Checklist

Z2.1 Introduction

- a. Part 2. NASA Environmental Management Checklist (Part 2) is intended to provide a consistent NASA checklist for use in EMS Review processes.
- b. This NASA Environmental Management System (EMS) Checklist follows the same format as NPR 8553.1, NASA Environmental Management System (EMS). The content of this checklist is primarily designed to reflect NPR 8553.1 at this time for a NASA Center.
- c. Part 2 is composed of two parts. The main body of text can be issued to a Center prior to a Headquarters led Environmental Functional Review (EFR) in order to assist in the review process.
- d. The main body of text or portions of Part 2 and the forms contained in Part 2, Attachment Z2.1, NASA Environmental Management System Checklist Forms, may be used by a Center when conducting internal EMS reviews. Use of this checklist and the forms contained in Part 2, Attachment Z2.1 is required under NPR 8553.1 during EMS reviews at self-declaring Centers. When being used by a Center, the Center will need to determine which parts of the checklist and forms apply across the Center and to each sub-organization at the Center. Centers are free to determine if they wish to issue applicable portions of the main body of the text of the checklist to sub-organizations prior to EMS review activities or if the content will be covered during the EMS review.
- e. Centers are required to fully transition from conformance with requirements of NPR 8553.1 dated May 6, 2002, to those NPR 8553.1A no later than March 22, 2007. Centers are required under NPR 8553.1A to conform to applicable EMS review and EMS self-declaration or external recognition program requirements by December 31, 2005. Use of this Checklist is subject to these conditions and this Checklist can be used to identify whether existing environmental programs meet applicable requirements.
- f. Reference excerpts are provided from the NPR in *Italics*, as well as suggestions on possible sources of information that could be used to demonstrate the current status of the area in question and how the requirements of the NPR are met. Note: Key additional / changed requirements associated with NPR 8553.1A compared with those of the May 6, 2002 version of NPR 8553.1 are provided in **bold Italics**. The text of this Checklist does reflect the revised NASA use of terminology such as aspects and impacts. Significant changes to existing questions in the text of this checklist since October 2000 are highlighted with the exception of Sections Z2.8, and Z2.9, which in their entirety are additions to the Oct 2000 version of this checklist.
- g. The highlighted text is provided to assist Centers with the transition to NPR 8553.1A. Centers should anticipate their use in any EFRs taking place no later than 2 years from the effective date of NPR 8553.1A (March 22, 2005).
- h. Section Z2.8 is intended for use only during EFRs and is provided herein for Centers to assist with awareness of how they will be evaluated in this area.
- i. Centers that have decided to participate in an external recognition program (Section Z2.8.3) have committed

to conformance with its requirements, thereby making the program requirements of that external recognition program, auditable criteria, as they are "other" commitments to which the Center has committed itself.

- j. Section Z2.9 is provided for Centers participating in the U.S. Environmental Protection Agency, National Environmental Performance Track (NEPT) program. Centers that have decided to participate in that external recognition program have committed to conformance with its requirements, thereby making NEPT program requirements, auditable criteria, as they are "other" commitments to which the Center has committed itself.
- k. For Centers registered to ISO 14001, the base checklist in Sections Z2.2 to Z2.6 meets or exceeds ISO 14001:1996 Section "5.4 EMS Audit" checklist requirements. These Centers can expect that their registrar will require them to have completed the transition to ISO 14001:2004 no later than May 16, 2006. To assist with this transition and for long-term use in the future, each section of this checklist, where appropriate, includes additional checklist items specifically geared towards additional or changed clauses found in ISO 14001:2004. These additional items have been enclosed in text boxes to assist in clarifying their intended use.
- l. If a Center wishes to participate in a state EMS recognition program, it is the responsibility of the Center to determine requirements for the specific program. The Center should evaluate the requirements of the program against the EMS requirements in the NPR and determine what additional requirements there are for the state program. It will be necessary for the Center to develop a separate or augmented checklist in order to gauge their performance in meeting the state requirements. State EMS recognition programs may include requirements that are beyond those of the NASA EMS and Self-Declaration or which upon close examination may be satisfied by using existing EMS elements.
- m. Part 2, Attachment Z2.1 provides auditing forms for use only by experienced auditors during the various EMS reviews and assessments noted above. The forms include summary notations about the checklist, and suggestions for possible means of verification of the status of Centers relative to the checklist.

Z2.2 Environmental Policy

Z2.2.1 Reference

"2.0 Environmental Policy NASA Policy on Environmental Quality and Control, 14 CFR, subpart 1216.1, expresses NASA's commitment to the broad statement of national environmental policy expressed by Congress in the National Environmental Policy Act. NASA Policy Directive (NPD) 8500.1, NASA Environmental Management, is NASA's internal environmental policy. This policy is available to both the public and the NASA community through NASA's Web pages and NODIS at ... and is consistent with 14 CFR, subpart 1216.1. 4.2.2.2 NASA Centers and Mission Directorates and Mission Support Offices shall ensure that all employees are aware of the existence of NASA environmental policy and its applicability to their work."

Z2.2.2 Checklist items

- a. How does Center Management (including the environmental management committee or working group) review and implement environmental policy?
- b. If a Center has adopted a Center specific environmental policy as the Primary focus of the Center EMS, does its content either reference or cover at a minimum that of the NASA Policy?
- c. How does the Center ensure that all employees are aware of the policy and its applicability to their work?
- d. How are applicable environmental policy commitments documented for contractors and communicated to tenants?
- e. How is the environmental policy made available to the public?

f. Identify how the Center environmental policy commits to complying with applicable legal and other requirements, which relate to the Center's environmental aspects.

g. How is the policy communicated to all persons working for or on behalf of the Center?

Z2.3 Planning

Z2.3.1 Environmental Aspects and Impacts

Z2.3.1.1 Reference

"P.2 APPLICABILITY The scope of the EMS at each Center consists of management defined: activities, products, and services applicable to the EMS, over which the Center has control and/or influence. 1.1 Roles

*and Responsibilities Each NASA Center is responsible for: (1) Determining the applicability of this EMS to its contractors, **to satisfy EMS-related requirements of Executive Order 13148 (and applicable Federal Acquisition Regulations)**. When a determination is made that the EMS is applicable, the NASA officials responsible for the contracts shall ensure that a requirement for implementing this EMS is incorporated into all such contracts no later than the time of the next recompetition of the contracts. (2) **Determining the applicability of the EMS to its tenants in order to satisfy EMS-related requirements of Executive Order 13148, subject to the limitations of tenancy agreements. When a determination is made that the EMS is applicable, Center Management shall ensure that EMS requirements for tenants are incorporated into future tenancy agreements.** (3) **Working with the Headquarters Environmental Management Division to define the scope of the Headquarters Environmental Management System as it pertains to the Agency and Centers"***

"3.1.2.3 NASA Centers are responsible for --

*e. Identifying and documenting Center activities (past, present, and future), products, and services within **the scope of the Center EMS**. f. Identifying and documenting the environmental aspects and associated environmental impact(s) of the documented activity, product, or service. g. Applying the EMS environmental aspect risk criteria. h. Periodically reviewing and updating the results of steps a. through c. above."* Note: Chapter 3.1.3, Requirements for aspects and impacts have not been repeated herein.

Z2.3.1.2 Checklist Items

- a. Provide the Center's documented description of the scope of the Center EMS, including activities (past, present, and future), products, and services.
- b. Describe how the Center identifies environmental aspects and impacts essential to developing their environmental management program. This should include:
 1. The following steps:
 - i. Identification of all activities products and services.
 - ii. Aspect and impact identification.
 - iii. Aspect and impact grouping into aspect categories.
 - iv. Consideration of adverse and beneficial impacts, and scoring of severity of the impacts and the frequency of their occurrence.
 2. Review the documentation of aspects and impacts for comprehensiveness including records of determination aspect categories, the impact categories, severity / frequency scores and determination of overall risk ranking levels.
 3. Describe the Center approach for identifying and considering normal, abnormal, and emergency situations in identifying and evaluating aspects and associated known and potential impacts.
 4. Describe the Center processes for identification of new aspects and impacts, and changes to aspects and impacts as a result of changes in requirements, products, processes, equipment and infrastructure.
- c. Describe the Center's environmental risk management program. Is risk management an element of all programs?
- d. How does the Center determine the applicability of the EMS to its contractors? What contract language has been developed which specifies requirements for the contractor to implement components of the EMS?
- e. How does the Center determine for its tenants, the activities, products and services of that tenant, which are included in the scope of the EMS? What tenant agreement language has been developed which specifies EMS related roles and responsibilities for tenants?

- f. How does the Center's documented description of the scope of the Center EMS, identify or include activities products and services that it can influence?
- g. How does the Centers aspect and impact identification and analysis process ensure that it takes into account, planned changes in activities, products and services at the Center?
- h. Described how the Center ensures that the high priority environmental aspects are taken into account throughout all areas of the EMS (each of Sections Z2.3.2 to Z2.6 below).

Z2.3.2 Legal and Other Requirements

Z2.3.2.1 Reference

"1.2.25 Legal and Other Requirements - those requirements that NASA or a Center is regulated to or has committed to meeting. Legal requirements include Federal, State and local laws, regulations, ordinances or policies; Office of Management and Budget circulars; Executive orders; enforceable Agency agreements; contractual obligations; and international obligations. Other requirements include internal standards, voluntary Agency agreements, Presidential initiatives, industry codes or practice, and non-regulatory guidelines. NASA Centers are responsible for -- i. Developing, implementing and maintaining procedures for the identification of **legal and other requirements and proposed changes to existing legal **and other requirements for applicability to Center activities and operations**. j. Evaluating NASAwide and Center agreements and commitments. k. Ensuring applicable legal and other requirements are available to appropriate individuals. l. Providing information identified under step a. to Mission Directorates and Mission Support Offices when requested. m. Consulting with their Office of Chief Counsel, as appropriate, in fulfilling responsibilities under Chapter 3.2."**

Z2.3.2.2 Checklist Items

- a. How does the Center utilize the regulatory support information on federal and state statutes, regulations, and executive orders provided by NASA Headquarters Environmental Management Division?
- b. How is information provided to Mission Directorates and Mission Support Offices on Center legal or other requirements?
- c. How does the Center evaluate, track and update information on: existing and new legal and other requirements applicable to the environmental aspects and impacts associated with its activities, products, and services and integrate them into Center programs and the implementation of NASA Policies?
- d. How does the Center identify, track and update information on existing and new NASA-wide and Center agreements and commitments applicable to the environmental aspects and impacts associated with its activities, products, and services and integrate them into Center programs and the implementation of NASA Policies?
- e. How does the Center interpret and provide employees and management ready access to the applicable legal and other requirements identified and tracked as noted above?
- f. Highlight interaction with the Center Office of Chief Counsel over the past year.

- g. Describe the process(es) used by the Center to determine how legal and other requirements apply to Center environmental aspects.
- h. To what level of detail has the Center determined it needs to evaluate how these requirements apply?
- i. Describe how the Center ensures that legal and other requirements are taken into account throughout all areas of the EMS (each of Sections Z2.3.1 above and Z2.3.3 to Z2.6 below).

Z2.3.3 Objectives and Targets

Z2.3.3.1 Reference

"3.3.2.4 NASA Centers are responsible for -- a. Establishing and maintaining documented Center objectives and targets consistent with high priority environmental aspects and NASA environmental policy. b. Managing all other aspects so that they do not become high priority environmental aspects. These do not require EMS defined objectives and targets. 3.3.3 Requirements e. Objectives and targets shall be established at all appropriate organizational levels as needed for the implementation and maintenance of the EMS. f. Objectives and targets shall be established to address high priority environmental aspects. g. The determination of the need for objectives and targets shall be made by the appropriate NASA authority; however, the actual objectives and targets may be suggested by other interested parties h. When establishing objectives and targets each Center shall consider-- (1) Legal and other requirements. (2) Available technology options and infrastructure. (3) Operational, mission, and mission-related activities. (4) Financial resources. (5) Interests and views of stakeholders. d. Specific objectives and targets that are technically feasible and economically reasonable shall be established for high priority environmental aspects. e. If the determination is made that a high priority environmental aspect cannot be addressed with one or more objectives and targets due to being technically infeasible or economically unreasonable, the rationale behind this determination shall be documented. f. Objectives and targets may be established to address any medium, low,

or very low priority environmental aspects that a Center determines it needs to manage or maintain to ensure they do not become a high priority. g. Objectives and targets shall be reviewed and updated as appropriate."

Z2.3.3.2 Checklist Items

- a. Describe how the Center establishes and documents objectives and targets, and their timelines, for the high-priority environmental aspects.
- b. Also identify any objectives and targets:
 1. Needed for the implementation and maintenance of the EMS and
 2. For non high-priority environmental aspects
- c. With regard to the objectives and targets:
 1. How are they established at all appropriate organizational levels?
 2. In the process of establishing objectives and targets how have the following been considered:
 - i. Legal and other requirements?
 - ii. Available technology options and infrastructure?
 - iii. Operational, mission, and mission-related activities?
 - iv. Financial and technical resources?
 - v. Interests and views of stakeholders?
 3. What process is used to determine and document findings about technical feasibility and economic reasonableness?
- d. What process is used, and what evidence exists, for monitoring of progress towards objectives and targets and their review and updates to reflect changing situations?
- e. How does the Center ensure that the objectives and targets are consistent with NASA Environmental Policy, including the commitment to promote continual improvement?

g. How does the Center ensure that objectives and targets are measurable where practicable?

h. How does the Center ensure that the objectives and targets are consistent with the Center's Environmental Policy, including the commitment to promote continual improvement?

Z2.3.4 Environmental Management Program(s)

Z2.3.4.1 Reference

"3.4.2.3 Centers are responsible for -- a. Establishing and maintaining documented Center EMPs. 3.4.3 Requirements d. All high priority environmental aspects shall be managed within the limits of technological feasibility and economic reasonableness. e. Ensure that management controls are in place to: mitigate adverse environmental impacts or secure existing benefits, associated with non-high priority environmental aspects, and prevent those environmental aspects from becoming high priority and manage NASA environmental policy and compliance activities. Controls shall remain in place unless it is determined that they are no longer required. f. EMPs shall -- (7) Designate responsibility for achieving objectives and targets at each relevant function and level of organization. (8) Demonstrate that NASA is addressing its identified objectives and targets. (9) Address major compliance activities if applicable. (10) Identify required resources (technical and financial) to carry out the EMPs. (11) Reflect changes in objectives and targets. (12) Establish the timeframes in which objectives and targets are to be achieved."

Z2.3.4.2 Checklist Items

- a. Describe the Center's Environmental Management System Program(s). What documented operating procedures or implementation plans exist?
- b. Identify or list all environmental controls (Center-wide and those specific to selected areas or functions at the Center) handbooks, environmental management programs (EMPs), compliance activity programs, guidance materials, or standard operating procedures. This includes documentation in support of EMPs for high priority aspects, and management of medium and low priority aspects to prevent them from becoming high.

- c. Describe how the results of the following processes are addressed by the EMPs:
 - 1. Identification of activities, products, and services.
 - 2. Identification of aspects and impacts and their prioritization.
 - 3. Setting of objectives and targets.
- d. How does the Center ensure that the EMPs address NASA wide program requirements for achieving EMS objectives and targets? Consider if they include:
 - 1. Identification of program responsibility at all appropriate organizational levels.
 - 2. Identification of required resources (within identified limits of technical feasibility and economic reasonableness).
 - 3. Establishing program timeframes.
- e. How are changes in objectives and targets reflected in EMPs?
- f. If there are changes in activities, products and services, how are they reflected in changes to EMPs?
- g. How do EMPs address regulatory compliance activity requirements and ensure that regulatory compliance driven objectives and targets are maintained?
- h. Describe how environmental staff participate in project planning, design and construction to ensure compliance with environmental regulatory requirements.
- i. Describe the processes in place to ensure that all programs and projects for the Center, and other organizational functions, have been reviewed for environmental performance, impacts, and requirements. How do these processes ensure that Center actions do not have a disproportionately high and adverse human health or environmental effects on minority or low-income populations? Processes can include:
 - 1. Record of environmental consideration.
 - 2. MSDS review prior to procurement.
 - 3. Purchasing checkout list.
- j. Environmental Program Initiatives - The environmental program provides opportunities to develop environmental initiatives (other than regulatory compliance) and goals that will benefit or enhance NASA's environmental program. Success with the initiatives will be shared with other Centers. Summarize initiatives, including results, so that information can be shared agency-wide (optional if already reported under NETS).

22.4 Implementation and Operation

22.4.1 Structure and Responsibility

22.4.1.1 Reference "1.1 Roles and Responsibilities c. The Center Director is responsible for -- (10) Implementing NASA Environmental Policy and Requirements. (11) Defining the scope of the Center EMS. (12) As applicable, delegating Component Facility environmental management responsibilities to an appropriate Component Facility NASA Authority and optionally designating an individual to assume Center Director responsibilities for the EMS at Component Facilities (13) Assigning roles and responsibilities for the Center EMS Representative. (14) Providing the authority needed for the EMS Representative to implement and maintain the Center EMS. (15) Providing resources for the effective operation and maintenance of the Center EMS. (16) Periodically reviewing the Center EMS for status and viability. (17) Self-declaration of the Center EMS or participation in an external EMS recognition program no later than December 31, 2005. (18) Reporting to NASA Headquarters Environmental Management Division on EMS progress and metrics as requested. g. Each NASA Center is responsible for - (4) Reviewing and providing comments to Headquarters Environmental Management Division on NASA environmental information, policy, requirements, and guidance. e. The Component Facility NASA authority, shall be responsible for implementation of an EMS commensurate with the environmental responsibilities delegated by the Center Director The Component Facility EMS may be separate from, or a subset of, the Center EMS. 4.1.2.3Centers are responsible for implementing NASA Environmental Policy and this NPR. 4.1.2.4Center EMS Representatives are responsible for -- g. Ensuring the implementation and maintenance of Center EMS requirements. h. Documenting and communicating roles, responsibilities, and authorities to facilitate effective implementation of the Center EMS. i. Requesting resources for the effective operation and maintenance of the Center EMS. j. Exercising the authority necessary to implement and maintain the Center EMS. k. Establishing a Center EMS Core Team, or other means able to accomplish an equivalent function, with assigned roles and responsibilities. l. Periodically assessing, reviewing, and reporting on the condition of the Center EMS."

22.4.1.2 Checklist Items

- a. At the Center, how are EMS related roles and responsibilities for senior management identified?
- b. At the Center, how are environmental management roles, responsibilities, and authorities defined, documented, and communicated for all appropriate organizational levels (i.e., job descriptions, organizational charts, program manuals)? Consider the following:
 1. What delegation of authority exists within the environmental management organization?
 2. What offices and individual(s) have authority and accountability for various management functions?
 3. Identify documentation that establishes authority and indicate whether it includes cease and desist authority.
- c. Describe your environmental civil service staff and their assigned environmental programs (i.e., pollution prevention, hazardous waste).
 1. List names, titles, and briefly describe areas of responsibility for:
 2. Each environmental media (e.g., air, water).
 3. Their assigned environmental management system roles.
 4. List and describe how responsibilities are divided or shared between civil service and contractors.
 5. Provide available organization charts for the Center's environmental management organization.
- d. How has Center management defined the roles, responsibilities, and authority of the EMS representative and the EMS Center Core Team/equivalent function and by what means is conformance with these requirements ensured and where appropriate documented/recorded?
- e. How does Center management ensure adequate resources are provided for the EMS? Consider:
 1. Technology
 2. Financial resources
 3. Human resources and specialized skills including issues relating to dedicated environmental support and those with collateral duties, such as:
 - i. Issues/problems due to insufficient staff;
 - ii. How you assess environmental staffing needs (i.e., excessive overtime, excessive use of contractors, compliance deficiencies);
 - iii. Degree of success in gaining approval for additional staff and why;
 - iv. Programs not being undertaken due to insufficient staff; and
 - v. Issues regarding how contractor staff and "inherently governmental functions" are managed.
 - f. What processes exist to periodically review defined roles responsibilities and resources for appropriateness, and how is conformance with these processes demonstrated?
 - g. How does the environmental management committee or working group provide cross-organizational support in implementing new requirements?
 - h. How does the Center ensure that, NASA's Environmental Policy and the requirements of NPR 8553.1, as they apply to contractor operations within the scope of the EMS, are appropriately managed, at the procurement stage and during the life of contracts?

- i. How does the EMS Representative request, and Center Director ensure, the availability of resources to improve the EMS?

Z2.4.2 Environmental Training, Awareness, and Competence

Z2.4.2.1 Reference

*"4.2.2.1 Centers are responsible for establishing and maintaining procedures for -- a. Determining EMS training needs. b. Conducting training as required at each relevant level and function of the organization. c. Verifying and recording that the necessary EMS training has occurred 4.2.3 Requirements d. Employees engaged in activities associated with EMS environmental aspects or compliance activities, shall receive appropriate training, as determined by the Center under Chapter 4.2.2. e. Training records shall be maintained in accordance with Chapter 5.3. f. Employees shall be aware of the following areas, **as appropriate, based on activities they are engaged in** (Note: These may be accomplished **by formal awareness training or as a part of the employee's on-the-job training requirements**): (1) **Adverse environmental impacts and beneficial environmental impacts associated***

with the high priority environmental aspects of their work, that they may affect, and the benefits of improved environmental performance, and (2) Requirements of the EMS applicable to their work, and awareness of consequences associated with their deviation from these requirements."

Z2.4.2.2 Checklist Items

- a. Describe the process used to identify and track, training needs of all personnel whose activities may result in beneficial or adverse environmental impacts associated with environmental aspects or compliance activities.
 - b. Describe the process for identifying new training requirements (existing programs requiring review/revision or new program requirements). This includes evaluation of effectiveness of existing training programs.
 - c. Describe the process of training for new or transferred individuals.
 - d. Provide examples of how environmental and awareness training programs have been integrated with each other and into other training programs.
 - e. How does the Center ensure that personnel receive appropriate training and updates?
 - f. Describe the procedures for, and content of, employee awareness training including:
 1. The environmental aspects with high risk rankings associated with work that they may effect, and benefits of improved performance.
 2. Applicable requirements of the EMS.
 3. Roles and responsibilities in conforming to the environmental policy and EMS requirements and awareness of consequences of deviation from these requirements.
 - g. How is awareness and associated training renewed over time?
 - h. How does the Center ensure personnel whose activities may result adverse or beneficial impacts associated with environmental aspects or compliance activities, are competent on the basis of appropriate education, training, and/or experience?
 - i. Identify the means by which records of the above training (needs analysis and related to programs) are maintained.
 - j. Identify support organizations with environmental responsibilities and describe their awareness of environmental responsibility and extent of support they provide.
- k. How does the Center identify all persons (NASA staff, contractors, suppliers and others) performing tasks on its behalf that have the potential to cause adverse environmental impacts and beneficial environmental impacts associated with the high priority environmental aspects of their work?
 - l. Having identified these persons and associated high priority environmental aspects, how does the Center ensure they are competent on the basis of: appropriate education, training or experience. In the case of contractors and suppliers and others how is this ensured?
 - m. How does the Center ensure records of competence for all persons, including contractors, suppliers and others, are retained?
 - n. How does the Center ensure that all persons, including contractors, suppliers and others, are aware of the areas noted under Section Z2.4.2.2.f. above?

Z2.4.3 Communication

Z2.4.3.1 Reference

"4.3.2.2 Centers are responsible for -- g. Internal communication to various organizational levels. h. Receiving, recording, and responding to relevant communications from external parties. i. Following existing communications procedures (or creating new procedures as necessary) in communicating with internal and external parties. j. Choosing if they will restrict external communications regarding high priority environmental aspects to within Freedom of Information Act limits, as specified by the Guide for Freedom of Information Act

Requesters located at <http://www.hq.nasa.gov/office/pao/FOIA/guide.html>. k. Documenting applicable EMS requirements within contracts no later than the time of the next recompetition. l. Communicating applicable EMS requirements to tenants, subject to the limitations of tenancy agreements."

Z2.4.3.2 Checklist Items

- a. Describe existing communication procedures for communication with internal and external parties including:
 1. Communication lines between the environmental office and Center management.
 2. Communication lines between the Center and regulatory agencies and/or the public (environmental problems such as reporting spills or public comments).
 3. Communication procedures for communicating Center environmental aspects with external parties. (Note: Decision regarding external communication must be recorded.)
 4. Center processes for receiving, documenting, and responding to relevant communications from external interested parties.
 5. Center outreach programs.
- b. How are Center management updated regarding the requirements of NASA Environmental Management and applicable environmental laws and Executive Orders?
- c. Describe Center processes for communication of EMS requirements to Contractors and Tenants.

Z2.4.4 EMS Documentation and Document Control

Z2.4.4.1 Reference

" Centers are responsible for--

- a. Establishing and maintaining Center EMS documentation.
- b. Establishing and maintaining Center EMS document control procedures.
- c. Determining if they will use established quality management system conformant document control procedures, or other filing systems for the control of EMS documents.

4.4.3 Requirements

d. Specific document control procedures shall ensure the --

(1) Periodic review and update of EMS documents as necessary.

(2) Removal of obsolete EMS documents.

e. Obsolete EMS documents that are retained for legal and historical reasons shall be archived per NPD 1440.6, NASA Records Management, NPR 1441.1, NASA Records Retention Schedules, and NPD 2800.1, Managing Information Technology.

f. EMS documents and documented procedures shall be --

(7) Legible.

(8) Dated (with dates of revision).

(9) Readily available in locations where essential operations occur.

(10) Identifiable.

(11) Maintained in an orderly manner.

(12) Retained for a specified period.

d. Electronic or hardcopy versions of EMS documents under the Center EMS Representative's control shall meet the requirements of step c above.

f. Compliance documents are not subject to EMS document control requirements but shall be maintained according to external requirements and shall be readily available."

Z2.4.4.4 Checklist Items

- a. Describe how plans and procedures are managed.

1. How does the Center review, create, update, approve, and implement new procedures (e.g., Hazardous Waste Management Plans, Spill Prevention Plans, Pollution Prevention Plans) to ensure they are:
 - i. Legible?
 - ii. Dated (with dates of revision)?
 - iii. Identifiable?
 - iv. Maintained in an orderly manner?
 - v. Retained for a specified period?
2. How are documents periodically reviewed, revised, and approved for adequacy? How are obsolete documents removed at points of issue and use as necessary?
3. How are plans and procedures made readily available in locations where essential operations occur?
4. For each document, has a "document owner" and where possible and alternate, been assigned to maintain it?
- b. For all environmental (Center-wide and those specific to selected areas or functions at the Center) handbooks, environmental management programs (EMPs), management controls in place for medium and low priority aspects to prevent them from becoming high, guidance materials, or standard operating procedures (see, Section Z2.3.4.2.b. above):
 1. What process is in place to ensure that these are complete and maintained?
 2. How are interrelationships between these documents tracked and understood?
- c. Are documents current and available at all locations where operations essential to the effective functioning of the EMS are performed? How is this ensured and how are end users made aware of changes?
- d. Are obsolete documents suitably identified and stored as EMS records where appropriate, for legal and/or knowledge retention purposes?

- e. How does the Center ensure that Center generated EMS documents reference related documents necessary for operation of the EMS, which may or may not have been generated by the Center?
- f. Of these documents, how are documents of external origin managed to Center document management standards outlined above in Section Z2.4.4.2.a.
- g. For each element / area of the EMS, has the Center determined which documents, including records, it has found are necessary for effective planning, operations and control of processes that relate to the Center's high priority environmental aspects?
- h. How are these documents identified, and any listing kept up to-date?
- i. How is suitable identification applied to obsolete documents if they are retained?

Z2.4.5 Operational Control

Z2.4.5.1 Reference

"Definitions 1.2.30 Operational Controls - measures taken: to manage environmental aspects, to mitigate adverse environmental impacts or secure beneficial environmental impacts, and to manage NASA environmental policy and compliance activities. These may include: training, communication, procedures and practices, monitoring and measurement activities, and the installation and operation of physical structures or equipment. 1.2.31 Operational Control Procedures - documented procedures in place: to manage high priority environmental aspects, to mitigate adverse environmental impacts or secure beneficial environmental impacts, and to manage NASA environmental policy and compliance activities. 4.5.2.2 Centers are responsible for -- a. Operational controls and operational control procedures associated with high priority environmental aspects. b. Operational controls associated with non-high priority

environmental aspects, in place to prevent those environmental aspects from becoming high priority. c. Implementing and conforming to EMS procedures. 4.5.3 Requirements a. Procedures developed under Chapter 4.5.2 shall -- (1) Stipulate specific operating and maintenance criteria, and (2) **Be communicated to tenants as appropriate.** b. Centers shall document applicable procedures within contracts no later than the time of the next recompetition. c. Operational controls and operational control procedures associated with non-high priority environmental aspects, in place to prevent those environmental aspects from becoming high priority, shall remain in place unless it is determined that they are no longer required."

Z2.4.5.2 Checklist Items

- a. How does the Center identify those operations and activities whose impacts are associated with the high-priority environmental aspects in line with its policies, objectives, targets, and compliance activities?
- b. Does the Center have documented procedures established and maintained to address situations where the absence of such procedures could lead to deviations from the environmental policy, or from objectives, targets and compliance activities (e.g., inspection, reporting, emergency response, and NEPA)? Is there a list of documented and undocumented procedures?
- c. Describe how these procedures stipulate specific operating and maintenance criteria? A subset of examples is sufficient.
- d. Has the Center identified operations and activities requiring procedures (documented or undocumented) associated with management controls for medium or low priority aspects and preventing them from becoming high priority?
- e. Is there a list of these procedures?
- f. How has the Center determined what procedures, specifically in relation to the aspects of goods and services provided by contractors and suppliers, are needed in order to attain its objectives and targets? Is there a list of these procedures?
- g. How are these procedural requirements documented for suppliers and contractors (see also Section Z2.4.3.2.c. above)?
- h. What maintenance process(es) does the Center use to assess the adequacy, effectiveness and appropriateness of the procedures noted above (Section Z2.4.5.2.a. to Z2.4.5.2.g.)?
- i. How do tenant user-agreements address environmental responsibilities?
1. Itemize the types of tenant-user agreements, such as Memorandums of Agreement, policy documents, and Host Tenant Agreements.
2. Describe environmental responsibilities of tenant organizations and how these are communicated (see also Section Z2.4.3.2.c. above)?
3. Are clear lines of responsibility indicated in the agreement, including responsibility for funding requirements?
4. Is the degree of control and influence over tenant organizations noted in the definition of the scope of the EMS?

Z2.4.6 Emergency Preparedness and Response

Z2.4.6.1 Reference

"4.6.2 Centers are responsible for implementing emergency preparedness plans, procedures and guidelines. 4.6.3.a Employees shall be provided with, training as appropriate, on emergency preparedness and response requirements: (1) Associated with environmental aspects and impacts identified in Chapter 3.1, and (2) As externally required under legal and other requirements"

Z2.4.6.2 Checklist Items

- a. Are procedures developed and maintained to prevent and mitigate environmental impacts associated with emergency situations including accidental releases? Are there examples of this review from recent incidents? Make available the annually reviewed and updated local hazards/threat analysis (NPR 8715.2 4.2 (b) and 6.2.3 (b)).
- b. How does your Center review and revise emergency response plan procedures after an incident to address deficiencies? Make available the annual review of emergency preparedness and emergency response procedures (NPR 8715.2 6.2.3(c)).
- c. How frequently does the Center test its plan using activities such as drills or tabletop reviews and how do these activities tie in to plan improvements?
- d. How does the Center emergency planning process and hazards/threat analysis tie in with the aspects and impacts identification process (see Section Z2.3.1.2.b above)?

- e. What environmental training programs / program components are in place for aspects and impacts associated with emergency preparedness and response?
- f. How are these reviewed / revised and coordinated with other environmental training programs (see also Sections Z2.4.2.2.b and Z2.4.2.2.d above)?

9. Describe how the Center is able to demonstrate satisfactory responses to emergency situations and accidents, and any required measures to prevent, minimize or mitigate associated environmental impacts, have occurred?

Z2.5 Checking and Corrective Action

Z2.5.1 Monitoring and Measurement

Z2.5.1.1 Reference

"5.1.2.2 Centers are responsible for, establishing and maintaining documented procedures to track, monitor, and measure the key characteristics of operations associated with EMS objectives and targets and EMS high priority environmental aspects. 5.1.3 Requirements. Equipment used for monitoring shall be appropriately calibrated and calibration records maintained."

Z2.5.1.2 Checklist Items

- a. Describe the system used and documented procedures to inspect, test, monitor, track, and measure key characteristics of operations associated with EMS objectives and targets and high priority environmental aspects including:
 - 1. Contractors.
 - 2. Tenants.
 - 3. Recording information on:
 - i. Tracking of performance.
 - ii. Relevant operational controls.
 - iii. Conformance with objectives and targets.
 - 4. Inspection and testing which may include:
 - i. Equipment, hazardous waste accumulation and satellite accumulation points, air or water discharge points and tank tightness.
 - ii. Schedules and frequency for inspections and assessments.
 - iii. On going documented programs and one time programs.
- b. Describe processes for calibration of monitoring equipment associated with managing high-priority environmental aspects and the maintenance of calibration records.
- c. Describe monitoring and measurement activities at the Center associated with activities to manage medium or low priority aspects and prevent them from becoming high priority.

d. Describe Center processes for calibration or verification of monitoring and measurement equipment associated with managing environmental aspects, and the retention of associated records (replaces Sections Z2.5.1.2.b. and Z2.5.1.2.c.).

Z2.5.2 Nonconformance, Corrective and Preventive Action

Z2.5.2.1 Reference

*"5.2.2 Centers are responsible for establishing procedures to track nonconformance and corrective action. Center **quality management system** procedures may be used. 5.2.3 Requirements a. Preventive and corrective actions shall be appropriate to the magnitude of the environmental impact. b. Action **shall** be taken to mitigate any impacts caused by a nonconformance and provide for both initiation and completion of corrective and preventive action."*

Z2.5.2.2 Checklist Items

- a. Describe Center procedures for nonconformance and corrective /preventive action, including how responsibility and authority are defined, for:
 1. Identifying and investigating nonconformance?
 2. Initiating and completing corrective action to mitigate the impacts of nonconformance?
 3. Identifying and investigating the need for preventive action?
 4. Initiating and completing preventive action to prevent occurrence?
- b. How does the Center ensure that corrective or preventive actions taken have been effective and appropriate to the magnitude of the environmental impact?
- c. How does the Center implement and record changes in documented procedures resulting from corrective and preventive action?
- d. Describe the mechanisms used to identify, investigate, report, correct, track, and monitor trends in environmental problems and "incidents."
- e. Describe Center programs and provide examples of root cause analysis and trend identification, and mechanisms to communicate root causes, trends, and lessons learned.
- f. Describe how the results of: review of training programs, monitoring and measurement activities, environmental functional reviews, annual EMS reviews, reviews of compliance, management reviews, and evaluation and reporting of metrics (see Sections Z2.4.2, Z2.4.6, and Z2.5.1 above and Sections Z2.5.4, Z2.6 and Z2.7 below) tie into corrective action processes at the Center.
- g. Describe the system(s) used to track inspection/audit findings and other sources of actions to ensure corrective actions or repairs are taken. Provide examples of the types of findings tracked and the numbers of resolved versus unresolved findings.

h. Describe how the results of reviews of compliance with other requirements to which the Center subscribes (see Section Z2.5.4 below), tie into corrective action processes at the Center.

Z2.5.3 Records

Z2.5.3.1 Reference

*"5.3.2 NASA Centers are responsible for -- c. For EMS records, conformance with this NPR, and applicable NASA records requirements including: NASA NPD 1440.6, NASA Records Management, NPR 1441.1, Records Retention Schedules, and NPD 2800.1, Managing Information Technology. b. Retaining records of compliance activities in accordance with legal and regulatory guidelines. 5.3.3 Requirements a. A records retention matrix for EMS records shall be established and maintained. b. Environmental records shall be legible, identifiable, and traceable to an activity, product, or service. c. Environmental records shall be maintained and stored in a manner that -- (1) Allows for their ready retrieval, and (2) Protects them from loss, damage, or deterioration. e. **Compliance records are not subject to EMS record requirements but shall be maintained according to external requirements and shall be readily available"***

Z2.5.3.2 Checklist Items

- a. Records and operational/historical data are critical to environmental management. Describe the following as they pertain to your organization:
 1. Records retention matrix for EMS records (see Appendix B.2), including all forms: paper, magnetic, electronic or optical disc, photographic or combination thereof.
 2. Controls in place to ensure the legibility, integrity, accuracy, and timeliness of environmental data.
 3. Availability of environmental records and data for examination.
 4. Protection of records from loss, damage, or deterioration.
 5. Record-keeping responsibilities of contractors and monitoring of contractors.
- b. How are records maintained so that they can be traced to an activity, product or service?

c. How has the Center identified, for each element of the EMS, which records are necessary to demonstrate conformity to the requirements of the EMS?

Z2.5.4 EMS Audit

*Z2.5.4.1 Reference "5.4.2.2 Centers are responsible for -- Supporting Headquarters Environmental Management Division - led environmental functional reviews as necessary to ensure that Center programs, projects, facilities, systems, and operations comply with all environmental requirements. **Establishing and maintaining programs and procedures for internal annual EMS reviews and internal reviews of compliance with local environmental regulations. Internal, annual EMS reviews, in years that Headquarters Environmental Management Division - led environment functional reviews are not conducted. At a minimum, in conducting its annual EMS reviews, each Center will internally review all elements of its EMS for conformance with this NPR, as applicable to its internal sub-organizations, over a 3-year period. Periodic internal reviews of compliance with local environmental regulations. At a minimum compliance with all applicable local environmental regulations will be reviewed over a 3-year period. 5.4.3 Requirements c. Results of previous Headquarters Environmental Management Division -led environmental functional reviews, independent self-declaration assessments, Center-led annual EMS reviews and reviews of compliance with local regulations shall be considered, as appropriate, by Centers when conducting EMS reviews and reviews of compliance with local environmental regulations. d. Results of annual EMS reviews, self-declaration assessments, and reviews of compliance with local environmental regulations and environmental functional reviews shall be provided to Center Senior Management. e. Center auditing procedures shall address auditor competence."***

Z2.5.4.2 Checklist Items

- a. Describe Center internal review systems. Consider the following factors:
 1. Has the organization established a program and procedures for conducting annual Center level EMS reviews that cover off all elements of the EMS, as applicable to internal sub-organizations, over a 3-year period?
 2. Does the review program determine whether or not the EMS conforms to planned arrangements (requirements of NPR 8553.1, and those that have been defined in Center EMS documents, documented procedures and procedures (written or non-written) see Appendix B.2)?
 3. How does the review program determine whether the EMS review itself has been properly implemented and maintained?
 4. How does the EMS review system provide information on the results of reviews to Center Senior Management?
 5. How does the review process consider the results of previous internal EMS reviews, independent EMS assessments and environmental functional reviews?
 6. Does the EMS review system include schedules based upon the environmental importance of the activity concerned and the results of previous reviews?
 7. Does the review system cover the: review criteria (beyond Sections Z2.2 to Z2.7 of this checklist), scope, frequency, and methodologies used?
 8. Does the review system identify responsibilities and requirements for conducting reviews and reporting results?
- b. Outline documented Center programs and procedures for review of compliance with environmental legal requirements.
- c. Describe the Center's processes for acting upon the results of compliance reviews. Make available results of recent reviews and resulting/resolved actions. How is this integrated with the requirements for corrective and preventive action?
- d. Describe the Center's processes for providing Center Senior Management with the results of: reviews of compliance with local environmental regulations and environmental functional reviews.
- e. Describe the how the Center ensures auditor competence, including: objectivity and impartiality for its internal EMS and compliance reviews.
- f. Describe the Center process for, and the assigned responsibilities of the EMS representative, related to reporting recommendations for improvement of the EMS to Center Senior Management?

- g. Outline documented programs and procedures for review of compliance with other requirements to which the Center subscribes.
- h. Describe processes for acting upon the results of reviews of compliance with other requirements to which the Center subscribes. Make available results of recent reviews and resulting/resolved actions. How is this integrated with requirements for corrective and preventive action?
- i. Describe the Center's processes for providing Center Senior Management with the results of: reviews of compliance with other requirements to which the Center subscribes.
- j. Describe the Center's processes for keeping records of the results of: EMS reviews, reviews of compliance with environmental legal requirements and reviews of other requirements to which the Center subscribes.

Z2.6 Management Review

Z2.6.1 Reference

*"6.2.4 Center Directors are responsible for periodically reviewing Center EMS for status and viability. 6.2.5 Center EMS Representative is responsible for -- a. Reporting to the Center Director and NASA Headquarters Environmental Management Division on the results of **Center-led annual EMS reviews** and on the status and viability of the Center EMS. c. Reviewing and updating (as necessary) Center objectives and targets. d. Reviewing the determination(s) of technical feasibility and economic reasonableness where it was decided not to set objectives and targets to address high priority environmental aspects."*

Z2.6.2 Checklist Items

- a. Describe the mechanism used for the Center Director to review and act upon environmental functional reviews, and other information deemed appropriate, in determining whether environmental policy, objectives, targets, or other Center EMS component changes are required in light of:
 - 1. Audit results.
 - 2. Changing circumstances.
 - 3. The commitment to continual improvement of the EMS.
- b. Describe the reporting process used for communicating the results of the internal EMS reviews and the status and viability of the EMS to the Center Director.
- c. How frequently and under what circumstances are Center level management reviews conducted?
- d. Describe the topic areas covered in recent management reviews.
- e. Describe the role of the EMS representative in the management review process at the Center.
- f. Describe how the results of the management review are documented and acted upon.

- g. Describe the process of preparation for a management review including the EMS Representative's process for preparing recommendations for improvement.
- h. (Replace Section Z2.6.2.a. with) Describe the mechanism used for the Center Director to review and determine whether: environmental policy, objectives, targets, or other Center EMS component changes are required in light of:
 - 1. Results of EMS reviews, environmental functional reviews, reviews of compliance with legal requirements and reviews of compliance with other requirements to which the Center subscribes.
 - 2. Communication from external interested parties, including complaints.
 - 3. The environmental performance of the Center.
 - 4. The extent to which objectives and targets have been met.
 - 5. Status of corrective and preventive action.
 - 6. Follow-up actions from previous management reviews.
 - 7. Changing circumstances, including changes in applicable legal and other requirements.
 - 8. Recommendations for improvement.
- i. Describe the minimum: areas covered, and content of, output generated by a Center management review.

Z2.7 Metrics

Z2.7.1 Reference

"7.2.3 Centers are responsible for -- a. Corrective actions addressing non-conformances identified as a result of evaluating and reporting of metrics. b. Reporting metric results to NASA Headquarters Environmental Management Division. 7.3 Requirements Metrics shall be documented and reported in accordance with a schedule as established by NASA Headquarters Environmental Management Division."

Z2.7.2 Checklist Items

- a. What metrics does the Center utilize in its internal EMS reviews?
- b. What EMS changes have been instituted based on the review of metrics?

Z2.8 Self-Declaration and External Recognition Programs

- a. For those Centers who have determined that they wish to self-declare their EMS, the following series of checklist items are for use during EFRs and can also be used by Centers to evaluate if they satisfy the requirements for self-declaration. The content of this section of the checklist is designed primarily to meet the requirements of the Environmental Management System Agency Self-Declaration Protocol for Appropriate Federal Facilities (Final Version September 10, 2003) provided by the Office of the Federal Environmental Executive (OFEE).
- b. Excerpts are provided from the OFEE Protocol in Italics, and NPR 8553.1A followed by suggestions on possible sources of information that could be used to demonstrate the current status of the area in question and how requirements are met.
- c. This section does not replace content of Section Z2.5.4 above and should be used in conjunction with it.

- g. Section Z2.8.3 applies to Centers which have elected to participate in an external recognition program as an alternative to self-declaration of their EMS.

Z2.8.1 Self-Declaration Process

Z2.8.1.1 Reference

(OFEE)

"Agencies / bureaus shall direct their facilities or organizations to use one or more EMS evaluation guide(s)" Guidance will cover "makeup of the independent review team (e.g., Headquarters, other facility, other agency, or contractor), and qualifications of independent reviewers, a requirement for facility or organization management to make a Self-Declaration statement that the EMS is in place when that conclusion is reached. direction on documenting and using the results of EMS evaluations. This shall include steps for acknowledging adequate facility EMSs," (NPR 8553.1) "1.2.34 Self-Declaration - refers to a NASA Center's statement that it is conformant with NASA's EMS self-declaration requirements and the Agency Self-Declaration Protocol for Appropriate Federal Facilities. 1.2.21 Independent Self-Declaration Assessment - refers to an assessment of conformance of a Center's EMS to the defined criteria of this NPR by individuals without direct responsibility for the activities being assessed. 1.2.20 External EMS Recognition Program - includes any of the following: the International Organization for Standardization's (ISO), ISO 14001, the Environmental Protection Agency's (EPA), National Environmental Performance Track, and/or an acceptable State-sponsored EMS recognition program. 6.2.5.a Center EMS Representative is responsible for -- Reporting to the Center Director on the results of annual EMS reviews and self-declaration assessments as applicable. Center Directors are responsible for -- 1.1.c Self-declaration of the Center EMS or participation in an external EMS recognition program no later than December 31, 2005. 6.2.4.b When applicable, making an annual EMS self-declaration that the Center EMS conforms to applicable requirements of this NPR, is in place, and is viable. 5.4.2.2 Centers are responsible for, if self declaring their EMS: Annual EMS reviews utilizing the current NASA Environmental Management System Checklist as it applies across the Center and to internal sub-organizations. Independent self-declaration assessments every third year. The environmental management portion of a Headquarters Environmental Management Division conducted environmental functional review, is a source of an independent self-declaration assessment."

Z2.8.1.2 Checklist Items

- a. Describe the Center process for EMS evaluation used in conducting EMS self-declaration assessments. Make available the operating procedures used and identify the version of the EFR checklist used for the most recent assessment.
- b. Describe how the self-declaration assessment covers off all elements of the EMS, as applicable to internal sub-organizations.
- c. Describe how independence and objectivity was achieved in the assessment process in general when the last independent self-declaration assessment was conducted.
- d. What requirements has the Center set as its criteria that a statement of self-declaration is appropriate?
- e. Describe the process used by the Center to make a self-declaration statement that the EMS is in place and viable.
- f. Make available the most recent self-declaration assessment and resulting report to the Center Director and the Center Director's self-declaration statement.

Z2.8.2 Self-Declaration Results / Feedback

Z2.8.2.1 Reference

(OFEE) Guidance will cover

"follow-up actions to address inadequacies in the EMSs, and reporting results of evaluations for inclusion in agency-wide annual EMS reviews." Z2.8.2.2 Checklist Items a. Describe the process by which the Center documents and uses the results of the Self-Declaration assessments and the Center's process for determination of status and viability. b. Describe the mechanisms used by the Center to investigate, report, correct and track inadequacies and areas for improvement, identified in the assessment and the Center's process for determination of status and viability. c. How is feedback on the EMS Self-Declaration evaluation process documented and reported to NASA Headquarters Environmental Management Division? Z2.8.3 External Recognition Programs Z2.8.3.1 Reference (OFEE) Guidance will cover "Agencies / bureaus shall include appropriate guidance to ensure that facilities desiring to participate in a Federal or state EMS recognition program (e.g., National Environmental Performance Track, Oregon Green Permit Program, New Jersey Silver Track Program) reflect the respective requirements in their self declaration procedures." (NPR 8553.1) "State Sponsored EMS Recognition Program - an acceptable State sponsored EMS recognition program, will involve at a minimum, equivalent requirements to those for EMS Self-Declaration."

Z2.8.3.2 Checklist Items

- a. Which external recognition program(s) does the Center choose to participate in?
- b. Are there any gaps between this program and the requirements for independence and comprehensiveness of the process associated with Self-Declaration?
- c. Has the Center identified the gaps between the requirements of NPR 8553.1A and those that are assessed as part of the external recognition program?
- d. How are the gaps (Sections Z2.8.3.2.b. and Z2.8.3.2.c. above) addressed by the Center?
- e. How are the results of assessments of the Centers EMS associated with the External Recognition program reported to senior management at the Center and how are noted areas of weakness or deficiencies acted upon?

Z2.9 National Environmental Performance Track

- a. For those Centers who chose to become, or who are, program members of the National Environmental Performance Track (NEPT), the following series of questions can be used to assist in evaluating if they satisfy the requirements for NEPT. The content of this section of the checklist is designed primarily to meet the requirements of the NEPT program, as referenced in the documentation given below.
- b. Excerpts are provided from the list of NEPT documents in italics. Suggestions on possible sources of information that could be used to demonstrate the current status of the area in question are provided.
- c. Documentation used to define the specifics of NEPT criteria, include:
 1. National Environmental Performance Track Program Guide (EPA 240-F-01-002), March 2003 (Program Guide);
 2. National Environmental Performance Track Application Form (OMB No. 2010-0032), Expiration Date: 06/30/03 (Application);
 3. National Environmental Performance Track Checklist (Checklist) (<http://www.epa.gov/performance-track/apps/app.htm>);
 4. National Environmental Performance Track Standard Criteria (Std. Criteria) (<http://www.epa.gov/performance-track/program/index.htm>);
 5. Final Performance Track Program Changes (Program Changes)
 6. (<http://www.epa.gov/performance-track/events/news.htm>);

In addition to the Questions under Section 9 of Attachment Z2.1, it is recommended that Centers also review the Performance Track independent assessment protocol (http://www.epa.gov/performance-track/ind_assessment.htm#current).

Z2.9.1 Environmental Policy

Z2.9.1.1 Reference

"A written environmental policy, defined by top facility management, that includes commitments to:... (3) continuous improvement in environmental performance, including areas not subject to regulations; and (4) sharing information about environmental performance and the operation of the EMS with the community."

Z2.9.1.2 Checklist Items

- a. Does the Center have a Center level, environmental policy that commits to pursue "continuous" improvement in environmental performance and a requirement to share information on EMS performance with the community?
- b. Describe how the Center environmental policy commits to continuously improve environmental performance, even in areas where there are no regulatory requirements.
- c. Describe how the Center environmental policy commits to sharing information with the community about Center environmental performance and how the EMS operates. Or describe how Center programs and procedures share information with the community regarding environmental performance and how the EMS operates.

Z2.9.2 Planning

Z2.9.2.1 Reference

"Identification of significant environmental aspects and legal requirements, including procedures for integrating anticipated changes to the facility's requirements or commitments in the EMS. Measurable objectives and targets to meet policy commitments and legal requirements, to reduce the facility's significant environmental impacts, and to meet the performance commitments made as part of the facility's participation in the program. In setting objectives and targets, the facility should consider the following criteria: preventing pollution at its source, minimizing cross-media pollutant transfers, and improving environmental performance" "Does your EMS include an inventory of all your legal requirements at the Federal, State, tribal, or local level?"

Z2.9.2.2 Checklist Items

- a. Describe the Center procedure for identification of tribal legal and other requirements, where applicable.
- b. Describe the Center process for integrating anticipated changes to the Center's requirements and/or voluntary commitments.
- c. Describe how the Center establishes measurable objectives and targets to meet the performance commitments made as part of the facility's participation in NEPT.

Z2.9.3 Implementation and Operation

Z2.9.3.1 Reference

"Establish roles and responsibilities for meeting objectives and targets of the overall EMS and compliance with legal requirements, including a top management representative with authority and responsibility for the EMS." "Defined procedures for: (1) achieving and maintaining compliance and meeting performance objectives; (2) communicating relevant information regarding the EMS, including the facility's environmental performance, throughout the organization; (3) providing appropriate incentives for personnel to meet the EMS requirements; "Does your EMS hold managers and employees accountable for meeting EMS requirements? A facility will demonstrate its commitment to public outreach and report periodically on its performance."

Z2.9.3.2 Checklist Items

- a. How does the Center EMS hold managers and employees accountable for meeting EMS requirements? Are there defined procedures for providing appropriate incentives for personnel to meet the EMS requirements?
- b. How does the Center demonstrate a commitment to public outreach?
- c. Describe the process by which the Center reports periodically on their performance.

Z2.9.4 Checking and Corrective Action

Z2.9.4.1 Reference

*"facilities need to demonstrate past environmental achievement and commit to continued improvement in their performance. Past achievements and future commitments will be in specific **aspects** of environmental **categories**." "Prior to applying to the Program, facilities must have had an assessment of their EMS conducted by an independent party. For purposes of this criterion, an independent party is one that is neither directly employed by the applying facility nor has played a substantive role in developing the facility's EMS. Have you completed at least one EMS cycle (plan-do-check-act)? Did this cycle include both an EMS and a compliance audit? Have you completed an objective self-assessment or third-party assessment of your EMS?"*

Z2.9.4.2 Checklist Items

- a. How does the Center demonstrate past environmental achievement and commit to continued improvement in performance? (Past achievements and future commitments will be in specific aspects of environmental categories.)
- b. Has the Center completed at least one EMS cycle (plan-do-check-act), including both an EMS and compliance audit?
- c. Has the Center completed an objective self-assessment or third-party independent assessment of the EMS?

Z2.9.5 Management Review

Z2.9.5.1 Reference

"Documented management review of performance against the established objectives and targets and the effectiveness of the EMS in meeting policy commitments. A facility will retain EMS documentation and provide a summary of its performance, including performance against objectives and targets, and a summary of the results of compliance and EMS audits, in its Annual Performance Report." "The Annual Performance Report includes the following categories of information:

- *Summary of the performance of the facility's EMS (based on objectives and targets), including a summary of the EMS and compliance audits performed and any corrective action taken.*
- *Brief progress report on the facility's performance commitments.*
- *Summary of the facility's environmental public outreach activities.*
- *Self-certification that the participant continues to meet the Performance Track criteria."*

Z2.9.5.2 Checklist Items

- a. Describe the reporting process by which a Center retains EMS documentation and provides a summary its performance, including performance against objectives and targets, and a summary of the results of compliance and EMS audits.
- b. Does the Center Annual Performance Report include the following:
 1. A summary of the facility's EMS assessment activities and progress towards meeting EMS objectives and targets, including brief descriptions of audits conducted and improvements made?
 2. A brief report on progress made in meeting the facility's environmental performance commitments?
 3. A summary of the facility's public outreach activities?
 4. A self-certification that the facility continues to meet NEPT's criteria for membership?

Part 2 Attachment Z2.1. NASA Environmental Management System Checklist Forms

- a. The following series of forms are for use by:
 1. NASA Headquarters Environmental Management Division when conducting environmental functional reviews (EFRs); and
 2. Centers when conducting annual; EMS reviews or self-declaration assessments.
- b. Each form is intended for use after the Center, or sub-organization at a Center, which is the subject of the EFR, EMS review, or self-declaration assessment, has provided the information outlined in the EMS Checklist.
- c. The forms are intended to serve as guidance while experienced auditors conduct audit and review activities. Auditors may choose to make notations regarding: sources of information used, individuals present or interviewed, and information obtained on the forms or attach additional pages or copies of material used in the execution of the auditing process.
- d. Each form covers one key section of the EMS Checklist and includes:
 1. A synopsis of the checklist items for the specific paragraph of the EMS Checklist.
 2. Where a procedure is required the symbol **P** is included in the form.

Note: **P** Means one or more procedures are needed to meet the requirements of various Chapters of NPR 8553.1. Centers have the option in these cases whether to document the procedures. If not documented, applicable personnel may be required to demonstrate knowledge of expectations.

3. Where a documented procedure is required the symbol **D** is included in the form.

Note: **D** Means one or more documented procedures, maintained in accordance with Chapter 4.4 is needed.

4. Where a record is required, the symbol **R** is included in the form.

Note: **R** Means one or more records are needed to meet the requirements of Chapter 5.3.

- e. In all cases, additional procedures, documented procedures, or records may be used at the discretion of the Center and these should be in place if their absence prevents the Center from meeting the requirements of the NPR.
- f. Notes such as: check this, review this, and confirm that, are included as helpful hints for the reviewers in the Description of Observation/Finding/Other Notes section of each form.
- g. The final box on each form (for Sections AZ2.1.2 to AZ2.1.6) includes items for consideration based on added on revised requirements associated with ISO 14001:2004 that are beyond the requirements of NPR 8553.1.

These are included to assist Centers that will need to conform to ISO 14001:2004 by no later than May 16, 2006.

NASA Environmental Management System Review Checklist AZ2.1.2 Environmental Policy	
Question: How is the NASA environmental policy implemented across the Center and how are employees made aware of the policy and its applicability to their work?? If the Center has adopted a Center specific environmental policy as the Primary focus of the Center EMS, does its content either reference or cover at a minimum that of the NASA Policy and is it periodically reviewed for continued adequacy? How are applicable environmental policy commitments documented for contractors and communicated to tenants?	
Description of Observation/Finding/Other Notes: <i>Canvas randomly selected employees and ask them to explain how the policy applies to them and the work they do and do they know where to get a copy.</i> <i>Is there a plan ensuring that all levels of the organization are familiar with the policy?</i> <i>How does the Center ensure that contractors and tenants are aware of applicable commitments within the policy and how they affect the Center's ability to meet those commitments?</i>	
14001:2004 <i>Review the Center policy for commitments to compliance with both applicable legal and other requirements.</i> <i>Interview contractors and suppliers (I.e. examples of all persons), and identify how they were made aware of the Center environmental policy and how it applies to them.</i>	
Reviewer Signature:	χ Notes continued on other side Date:

<p align="center">NASA Environmental Management System Review Checklist AZ2.1.3.1 Environmental Aspects and Impacts</p>	
<p>Question: How has the Center defined the scope of the EMS and followed the steps required to identify activities (past, present and future), products, services, aspect categories, aspects, impacts, consequences, frequency, and risk ranking prescribed in Chapter 3.1 of NPR 8553.1?</p> <p>How does the Center ensure that the aspects and impacts listing is reviewed and updated at regular intervals?</p> <p>How does the Center identify environmental risk in order to develop management strategies?</p>	
<p>Description of Observation/Finding/Other Notes: R Review the Center management definition of the scope of the EMS to assess its comprehensiveness.</p> <p>Review any Center specific processes P used to complete the identification of all aspects and high priority environmental aspects. If the Center has documented these processes they are subject to controls.</p> <p>R Records of aspects, impacts, aspect categories and the justification and background for risk rankings should be reviewed for completeness. Has the Center identified beneficial environmental impacts? Are the assigned aspect categories R in a format that will allow for NASA wide data comparisons?</p> <p>Ensure through interviews and documentation reviews that a comprehensive aspect and impact identification and classification process exists. This includes review steps taken to identify aspects associated with contractor and tenant activities within the scope of the EMS.</p> <p>Ensure processes P are in place to keep the aspect and impact information up to date. Examine R review notes and changes made.</p>	
<p>ISO 14001:2004</p> <p>Review how the Center scope and EMS considers activities, products and services it can influence.</p> <p>When reviewing the aspect and impact identification process, check to see that it takes into account planned changes in activities products and services.</p> <p>Discuss how the Center ensures how high priority environmental aspects are taken into account in the way each EMS element or sub-element operates. Note: This may be done when reviewing this element or as one added part of the conformance assessment for all other elements when they are assessed.</p>	
<p>Reviewer Signature:</p>	<p>χ Notes continued on other side Date:</p>

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<p align="center">NASA Environmental Management System Review Checklist AZ2.1.3.2 Legal and Other Requirements</p>	
<p>Question: How does the Center ensure that the legal and other requirements directly applicable to the environmental aspects and impacts associated with its activities, products, and services have been identified, are integrated into Center programs and the implementation of NASA Policies, and are communicated to appropriate individuals? This includes providing access, tracking and regular updating of information.</p>	
<p>How are new or changed requirements incorporated into operating procedures?</p>	
<p>Description of Observation/Finding/Other Notes:</p>	
<p>P Examine the procedure(s) that the Center uses to:</p> <ul style="list-style-type: none"> ▪ Identify existing, new, and changes to legal and other requirements, using NASA-wide, Center-specific, and additional resources. ▪ Determine who needs to know this information and how they are kept informed <u>and updated as appropriate.</u> ▪ Keep track of the requirements (document controls apply if Center has deemed procedures need to be documented in order to ensure they are followed). <p><i>Any interpretations generated on applicability of legal requirements, Center specific permits / agreements, or related training are records. R However, unless the Center deems it appropriate to maintain internal records of which legislation applies at different time periods, then the actual laws and regulations are a matter of public record and need not be treated as EMS records.</i></p>	
<p>ISO 14001:2004</p> <p><i>Review the Center's procedure for determination of how legal and other requirements apply to the aspects at the Center. Discuss the rationale used that limits the degree of detail to which this analysis of how these requirements apply is conducted.</i></p> <p><i>Discuss how the Center ensures how legal and other requirements are taken into account in the way each EMS element or sub-element operates. Note: This may be done when reviewing this element or as one added part of the conformance assessment for all other elements when they are assessed.</i></p>	
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<p align="center">NASA Environmental Management System Review Checklist AZ2.1.3.3 Objectives and Targets</p>	
<p>Question: What process does the Center use for setting objectives and targets? What factors are considered in setting them? <u>How is progress towards their achievement monitored</u> and how are they reviewed and updated if necessary?</p>	
<p>Description of Observation/Finding/Other Notes: D Review Center objectives and targets, for high-priority environmental aspects and any other aspects for which the Center has decided objectives and targets are appropriate. <i>If objectives or targets were not set for high-priority environmental aspects based on technical feasibility or economic reasonability, review record. R</i> <i>Determine how the Center has considered: legal and other, technology and infrastructure, operational and mission, financial, and stakeholder issues in setting objectives and targets. If a formal process P was undertaken there may be records.</i> <i>Get Center personnel to explain how it ensures objectives and targets align with the NASA environmental policy and continual improvement.</i> <u>Get staff to explain how progress towards objectives and targets is monitored. R Records of progress, if generated, should be reviewed.</u> <i>Staff should have a consistent answer regarding when and how objectives and targets are reviewed and updated.</i></p>	
<p>ISO 14001:2004 <i>Review the proportion of Objectives and Targets that are measurable.</i> <i>Get Center personnel to explain how it ensures objectives and targets align with the Center's environmental policy and continual improvement.</i></p>	
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NASA Environmental Management System Review Checklist**AZ2.1.3.4 Environmental Management Programs****Question:**

Describe the Center's environmental management programs (EMPs) and supporting guides, procedures, etc. and how they address the objectives and targets, and related compliance activities. **This includes programs in existence to prevent aspects from becoming high priority.**

How do the EMPs **and management controls** ensure NASA wide environmental programs, **including associated NASA governing documents**, are addressed? Include environmental program initiatives and NEPA related assessment activities.

Description of Observation/Finding/Other Notes:

Review the Center processes on how EMPs reflect the progression from:

- *Identification of new or modified activities, products, and services,*
- *Identification of new or modified aspects and impacts, and their prioritization, and*
- *Setting of objectives and targets. If established documented procedures for program development and execution are present and deemed necessary by the Center, then the procedures are subject to document controls.*

*Review the Center generated list of all EMPs and **D** and selectively review with Center personnel.*

Confirm that all high-priority environmental aspects are sufficiently covered.

Selectively review, with Center personnel, management controls in place for medium and low priority aspects to prevent them from becoming high.

Do EMPs include detail on who is responsible, resources, and timelines? Do these appear to be realistic and sufficient? Does the affected staff agree?

Review with staff, examples of, and what will trigger, a change in a documented EMP and changes in how medium or low priority aspects are managed. A replaced documented EMP will become a record **R.**

*How do the programs **and management controls** highlight and address compliance requirements? Including NEPA and environmental justice where applicable, is it the exception or the norm that these requirements are followed?*

Review program initiatives and have environmental staff detail how EMPs and their activities are included in all working areas of the Center (such as programs, design and construction).

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NASA Environmental Management System Review Checklist

AZ2.1.4.1 Structure and Responsibility

Question:

At the Center, how are environmental management roles, responsibilities, and authorities defined, documented, and communicated for all appropriate organizational levels? Is there “**stop work**” authority within environmental?

Describe your environmental civil service staff and their assigned environmental programs. Describe the roles of the environmental support contractor(s) and roles of support contractors that operate environmental programs at the Center.

How does Center management ensure adequate resources are provided for the EMS?

How does the environmental management committee or working group provide cross-organizational support / and improve access to senior management?

Description of Observation/Finding/Other Notes:

Review documentation of roles and responsibilities (R and R) for the EMS. **D** Review these for senior management, key environmental staff, the EMS representative, and the EMS core team or equivalent.

When interviewed, do staff's impressions of their R and R align with those they have been assigned? How have their R and R been communicated to them? Specifically examine R and R with the EMS representative/EMS core team or equivalent.

During interviews, discuss with senior management and environment staff how roles and responsibilities are determined and implemented in association with new or changing environmental requirements.

Ascertain the extent to which the EMS and environmental program “ownership” rests with environmental staff and the office versus operational staff.

Does it appear that management ensures adequate resources have been provided for the EMS and its maintenance in accordance with NPR 8553.1?

- ⇒ Issues/problems due to insufficient staff.
- ⇒ How you assess environmental staffing needs (i.e., excessive overtime, excessive use of contractors, compliance deficiencies).
- ⇒ Degree of success in gaining approval for additional staff and why.
- ⇒ Programs not being undertaken due to insufficient staff.
- ⇒ Issues regarding how contractor staff and “inherently governmental functions” are managed.
- ⇒ Resources/funding available for studies, research, and environmental maintenance activities.

Is there a clear line of authority leading from top management to overall programs and to detailed program execution with accountability? Is there evidence that things actually work the way the roles and responsibility documentation say they do? Evidence could be records of communications or instructions, for example, of how resources for a new or changed program were developed.

Review processes **P** / **D** for the management of contractor operations within the scope of the EMS.

ISO 14001:2004

Review the EMS representative responsibilities to ensure they include recommending improvements to the EMS and review how the EMS representative has been provided with resources to improve the EMS.

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NASA Environmental Management System Review Checklist
AZ2.1.4.2 Environmental Training Awareness and Competence

Question:

Describe the process used to identify and track training needs of all personnel whose activities may result in impacts associated with high-priority environmental aspects or compliance activities.

Describe the procedures for and content of employee awareness training.

How does the Center ensure personnel whose activities may result in impacts associated with high priority environmental aspects or compliance activities are competent on the basis of appropriate education, training, and/or experience?

Description of Observation/Finding/Other Notes:

Review Center procedures for identification of training needs, requirements for general awareness and competency training, and specific awareness (and related competence) for high priority environmental aspects and associated impacts employees may affect. P What triggers recognition of a new or revised training need (internal or external)?

The training procedures should ensure that needs once identified are correlated with appropriate training programs that are completed and whose effectiveness is monitored.

Are training and records R of training complete and up to date? Crosscheck selected records with interviewed staff.

How does the Center ensure that support organizations including on-site contractors are appropriately trained and aware?

How are training requirements for contractors whose activities are associated with high-priority environmental aspects addressed?

ISO 14001:2004

Review how the Center has identified and then ensures that persons are competent and aware as appropriate?

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<p align="center">NASA Environmental Management System Review Checklist AZ2.1.4.3 Communications</p>	
<p>Question: Describe existing communication procedures for communication with internal and external parties.</p>	
<p>Description of Observation/Finding/Other Notes: <i>To assess the effectiveness of internal communications review the quantity and nature of recent communications from management down and operational levels up as well, across the organization. This should include the environmental office as well as EMS-related communications not driven by the environmental office.</i></p> <p><i>Assess the effectiveness and access of internal communication from the environmental staff up the chain to senior management (Center Director/Deputy level).</i></p> <p><i>Review recent communications between the Center and outside stakeholders including regulatory agencies. Review for examples of reactive and proactive communication and follow-up.</i></p> <p><i>What procedure P exists for communicating the Center environmental impacts to external parties.</i></p> <p><i>Review Center processes for communication of EMS requirements to Tenants and documentation of them for Contractors.</i></p> <p><i>What communications procedures are used and do staff feel they are effective? P Determine if they are actually followed via review of records R and interviews.</i></p>	
<p>Reviewer Signature:</p>	<p>χ Notes continued on other side Date:</p>

<p align="center">NASA Environmental Management System Review Checklist AZ2.1.4.4 EMS Documentation and Document Control</p>	
<p>Question: Describe how plans and procedures are managed.</p> <p>What process is in place to ensure that for all environmental handbooks, environmental management programs (EMPs), guidance materials, and standard operating procedures, these are complete and maintained? How are internal relationships among these documents tracked and understood?</p>	
<p>Description of Observation/Finding/Other Notes: <i>The Center should have a formal process for the development, approval, and maintenance of procedures and documentation. P Review a subset of the EMS documents R or D to determine if they are within one or more document control systems and are the current versions located where they are needed (Review records and documentation for high priority environmental aspects and ongoing management controls.) What evidence exists of steps being taken to ensure that only current and appropriate documents are in place, and are the ones being used? Review disposition of obsolete documents.</i></p> <p><i>Do users and authors (at Center-wide and operational control levels of the organization) understand how the document control system works, their roles and the applicable specifics of document control requirements?</i></p> <p><i>Review documentation that explains how the core Center level EMS documents interact and provide direction to related EMS documentation. D</i></p>	
<p>ISO 14001:2004</p> <p><i>Review how EMS documents reference or refer to related documents including documents with external origins.</i></p> <p><i>How does the Center ensure that external origin documents are managed as EMS documents (review both documents that are on site but which come from external sources and documents that the Center does not keep on site but has established links to as a part of the EMS)</i></p> <p><i>When reviewing EMS documents, are they mapped to EMS elements (or sub elements) and has the Center identified documents that are necessary to demonstrate conformance with the EMS or ISO 14001:2004?</i></p>	
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NASA Environmental Management System Review Checklist**AZ2.1.4.5 Operational Control****Question:**

Does the Center have documented procedures established and maintained to address situations where the absence of such procedures could lead to deviations from environmental policy, objectives, targets, and compliance activities?

Describe how these procedures stipulate specific operating and maintenance criteria.

What procedures are needed in relation to suppliers, contractors, and tenants and how are these requirements met?

Description of Observation/Finding/Other Notes:

Review the listing of operational control procedures supplied by the Center for completeness and consideration of how well the procedures function as part of the management of environmental impacts and consequences. **D** When examining the procedures look for actual operational and maintenance criteria. Examine procedures associated with high priority environmental aspects as well as medium or low priority aspects being managed to prevent them from becoming high.

Examine the process(es) **P** that the Center uses to decide what operational controls are required and how the adequacy of these controls is assessed and maintained. How proactive versus reactive is this process?

How are operational controls **P** for suppliers and contractors developed, documented when needed **D** and communicated (within the limits of the scope of the EMS) and are the controls actually part of how things get done? **I** are the front line individuals aware of the purpose of the controls? Where practical, interview selected contractors and suppliers.

Examine how well the Center understands if its tenancy agreements, and any informal arrangements, align with Center objectives and targets and the overall EMS. Formal records **R** of such arrangements may be appropriate.

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NASA Environmental Management System Review Checklist**AZ2.1.4.6 Emergency Preparedness and Response****Question:**

Are procedures developed and maintained to prevent and mitigate environmental impacts associated with emergency situations?

How does the Center review and revise emergency response plan procedures after an incident to address deficiencies in how environmental impacts are mitigated?

How frequently does the Center test its plan?

What environmental training exists in association with emergency response plans and procedures?

Description of Observation/Finding/Other Notes:

Review the emergency response plans and procedures including any related Contingency Plans, SPCC Plans and P2 plans. **P**

Assess how comprehensive the identification of potential environmental impacts associated with potential emergencies identified under the NPR 8715.2 required Hazard / Threat / Vulnerability Analysis has been, and how these have been considered in the development of emergency response plans and procedures.

Review what impacts in association with potential emergencies were considered in developing the aspects and impacts list for the Center and its evaluation with the risk matrix.

Examine any revisions to the plans, as a result of tabletop reviews **R**, actual incidents, or new internal or external information.

How actively does the center pursue opportunities to improve in this area? Examine the Center's annual review **R** of emergency preparedness procedures.

Review **R** or **D** the environmental component of training associated with emergency preparedness and response for impacts within the scope of the EMS.

ISO 14001:2004

Review records **R** of responses to recent emergencies and accidents and assess the appropriateness of measures taken to minimize or mitigate associated environmental impacts.

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<p align="center">NASA Environmental Management System Review Checklist AZ2.1.5.1 Monitoring and Measurement</p>	
<p>Question: Describe the system used and documented procedures to inspect, test, monitor, track, and measure key characteristics of operations associated with EMS objectives and targets and high-priority environmental aspects.</p> <p>Describe processes for calibration of monitoring equipment.</p>	
<p>Description of Observation/Finding/Other Notes: Review monitoring and measurement plans and procedures. D</p> <p><i>Was a comprehensive process undertaken to identify characteristics of operations that need monitoring or measuring? This should include contractors, tenants, and any areas where operational controls have been identified as needed.</i></p> <p><i>Assess how the Center has determined what monitoring processes and equipment are critical for managing high priority environmental aspects and for preventing others from becoming high and how this is kept up to date.</i></p> <p><i>Review records R on progress towards meeting objectives and targets or maintenance of performance in already managed areas.</i></p> <p><i>Review record R keeping and sample records to see if monitoring is being conducted in accordance with procedures.</i></p> <p><i>Review calibration processes and records for EMS related equipment? D and R Note: Quality management system models for calibration are one possible method to follow.</i></p> <p><i>Review how progress towards, and conformance with, objectives and targets is monitored and measured. R</i></p>	
<p>ISO 14001:2004</p> <p>Review documentation D of information to monitor environmental performance associated with key characteristics.</p>	
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<p align="center">NASA Environmental Management System Review Checklist AZ2.1.5.2 Nonconformance, Corrective and Preventive Action</p>	
<p>Question: Describe Center procedures for nonconformance and corrective/preventive action.</p> <p>How does the Center ensure that corrective or preventive actions are appropriate to the environmental impact?</p> <p>What tracking and record keeping is done in association with these processes?</p> <p>How are these processes connected with auditing and management review processes?</p>	
<p>Description of Observation/Finding/Other Notes: Review the corrective and preventative action procedures. P These should include actions from Center, HQ, and external parties resulting from monitoring and measuring programs, reviews of the EMS, management reviews as a result of metrics and any of the EMS elements in general.</p> <p>Review how corrective action requirements are identified. In interviews are staff typically aware of the corrective and preventive action process and how it is an integral part of continuous improvement?</p> <p>Determine if proactive / preventive steps are in place that look internally and externally beyond the Center and NASA and how preventive actions are followed up on.</p> <p>Are actions tracked to completion and feedback provided on progress towards resolution? Follow a couple of actions from identification of an issue, through any root cause analysis (does the Center have a formal Root Cause Analysis process?), determination of course of action, assignment of responsibility, authority and resources, through to completion. This should be recorded in changes in documented procedures. R Select actions from across the various sources noted above and by the Center and assess if the process is effectively applied for different types of actions as well as levels of complexity and if the level of effort through the stages of identification to resolution are commensurate with the magnitude of the problem.</p> <p>Examine Center processes P for dealing with unresolved actions / for which long term solutions are required and follow on is required.</p> <p>How is periodic trend analysis of corrective and preventive actions accomplished? What trends were found (if any)?</p>	
<p>ISO 14001:2004</p> <p>How do reviews of compliance with legal and other requirements tie into corrective and preventative action procedures?</p>	
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<p align="center">NASA Environmental Management System Review Checklist</p> <p align="center">AZ2.1.5.3 Records</p>	
<p>Question:</p> <p>What record types and record keeping systems are in use? How does the Center <u>identify required records and ensure they are all properly controlled?</u></p> <p>How are records maintained so that they can be traced to an activity, product, or service?</p>	
<p>Description of Observation/Finding/Other Notes:</p> <p><i>Review selected EMS records in different record keeping systems and look for consistencies in approach and controls as an indicator of maturity of systems. Auditable records are:</i></p> <ol style="list-style-type: none"> <i>Activities Products and Services, Aspects and Impacts, Aspect Categories, and Risk Matrix inputs and results.</i> <i>EMS training records.</i> <i>Compliance activity records in accordance with legal and other requirements.</i> <i>Calibration and maintenance records.</i> <i>Management review results.</i> <i>Results of test of emergency response procedures.</i> <i>Decision with regard to external communication of high-priority environmental impacts.</i> <i>Changes in the documented procedures resulting from corrective and preventive action.</i> <i>Self-declaration assessments, Center EMS reviews, and compliance reviews.</i> <i>External communication.</i> <i>Any additional records listed in the Center's records retention matrix or Center EMS procedures.</i> <p><i>Review records maintained by NASA staff as well as contractors.</i></p> <p><i>Review records R associated with high priority environmental aspects and medium or low priority aspects being managed to prevent them becoming high.</i></p> <p><i>What steps are taken to allow records to be traced to the specific activity, product, or service? Crosscheck a few records to confirm that records can be traced.</i></p>	
<p>ISO 14001:2004</p> <p><i>When reviewing the records retention matrix, are records mapped to EMS elements (or sub elements) and has the Center identified records that are necessary to demonstrate conformance with the EMS or ISO 14001:2004?</i></p>	
<p>Reviewer Signature:</p>	<p>χ Notes continued on other side</p> <p>Date:</p>

NASA Environmental Management System Review Checklist AZ2.1.5.4 EMS Audit	
Question: Describe Center internal EMS review processes . Outline documented Center programs and procedures for review of compliance with environmental legislation and regulations. Describe the Center's processes for acting upon the results of compliance reviews, HQ Environmental Functional Reviews, and external audits.	
Description of Observation/Finding/Other Notes: <i>Review recent Center internal EMS review results. R Was a planned review procedure P used and followed? Was the process capable of providing the Center with an objective and impartial assessment of the state of the EMS? Review how any independent or external third party assessments or audits are integrated into the Center approach.</i> <i>How did the review assess conformance with the commitments required by NPR 8553.1 and by the Center's EMS documentation and procedures? (For example: Did selected elements of the management system get reviewed or were all elements reviewed? Do all operating areas of the Center come under scrutiny from time to time with emphasis on areas of environmental importance? Does the procedure increase review frequency in problem areas? What model for the review process was used [e.g. the NASA Example SOP or ISO 19011] and can the EMS staff articulate the rationale for how the process works?) Do reviews result in clear statements directed to affected parties as to if the EMS is properly maintained?</i> <i>How did the results get conveyed to management?</i> <i>Examine the compliance review process. Does it look at areas where a non-compliance may not exist at present but could? Does the review include recommendations for improved performance?</i> <i>Are trends in EMS non-conformances or regulatory non-compliance identified for further examination and possible root cause analysis?</i> <i>How are findings from internal, HQ, and external audits and reviews integrated into the preventive and corrective action system?</i>	
ISO 14001:2004 <i>Review the Center procedure P for reviews of compliance with other requirements, how this is reported to management and how results are dealt with.</i> <i>Review how records R of EFRs, EMS reviews, reviews of legal and other requirements are kept.</i>	
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<p align="center">NASA Environmental Management System Review Checklist AZ2.1.6 Management Review</p>	
<p>Question: Describe the mechanism used for Center level management to review and act upon reviews, audits, assessments, and other information deemed appropriate by management, in determining whether environmental policy, objectives, targets, or other EMS component changes are required.</p> <p>Describe communications processes and roles related to management reviews.</p>	
<p>Description of Observation/Finding/Other Notes: <i>In order to understand what information senior management is provided for making decisions, follow the process of preparation of EMS information for a Center-level management review through to actions resulting from a review. Documentation of the review R and how changes in Center-level EMS elements are directed by management should be examined to see that that top Center management is involved in the review.</i></p> <p><i>Check that a follow up process occurs.</i></p>	
<p>ISO 14001:2004</p> <p><i>Assess if the management review includes consideration of:</i></p> <ul style="list-style-type: none"> ▪ Results of EMS reviews, environmental functional reviews, reviews of compliance with legal requirements and reviews of compliance with other requirements to which the Center subscribes. ▪ Communication from external interested parties, including complaints. ▪ The environmental performance of the Center. ▪ The extent to which objectives and targets have been met. ▪ Status of corrective and preventive action. ▪ Follow-up actions from previous management reviews. ▪ Changing circumstances, including changes in applicable legal and other requirements. ▪ Recommendations for improvement. <p><i>Review how the EMS Representative process recommends improvements to the EMS.</i></p> <p><i>Review the outputs R from recent management reviews to ensure they include:</i></p> <ul style="list-style-type: none"> ▪ <i>Decisions and actions to be taken.</i> ▪ <i>Changes to policy, objectives targets and all EMS elements.</i> 	
<p>Reviewer Signature:</p>	<p>χ Notes continued on other side Date:</p>

<i>NASA Environmental Management System Review Checklist</i> <i>AZ2.1.7 Metrics</i>	
Question: What metrics does the Center utilize in its EMS reviews? Are they workload, performance, or data metrics? What EMS changes have been instituted based on the review of metrics?	
Description of Observation/Finding/Other Notes: <i>How useful is the information the metrics provide? Do the metrics need to be normalized?</i> <i>Is the behavior that each metric encourages understood by the Center and is it desirable?</i> <i>Do the results of metrics feed into the corrective action processes when appropriate?</i> <i>For EMS metrics provided to Headquarters in the past, review with environmental staff how the data was assembled / can be verified.</i>	
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SELF-DECLARATION FORMS

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NASA Environmental Management System Review Checklist
AZ2.1.8.1 Self-Declaration Process

Question:

Describe the Center process for conducting EMS self-declaration assessments?

How does the Center ensure independence in the assessment process?

What process is used to summarize the assessment results, report them to senior management at the Center and enable the Center Director to make a determination that the EMS is in place and viable?

Description of Observation/Finding/Other Notes:

Review the Center specific processes used to conduct EMS Self-Declaration.

Review with the EMS Representative how independence was attained for the Self-Declaration assessment. The assessment of the effectiveness of previous management reviews and most recent assessment under Section 5.4 which should not have been conducted by the same individuals year over year.

Review the most recent assessment, and report generated for senior management. Did the report provide information on all EMS elements, and areas where improvements were needed? Did the assessment and reporting process consider and note as appropriate, variations in the state of the EMS across the Center and the EMS components?

How was the Center Director engaged in the process of determining if the Center EMS was in place and viable?

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<i>NASA Environmental Management Review Checklist</i> <i>AZ2.1.8.2 Self-Declaration Results / Feedback</i>	
Question: How are the details of Self-Declaration Assessments Documented? How is follow-up associated conducted? How are the results of assessments reported to NASA HQ EMD?	
Description of Observation/Finding/Other Notes: <i>Review the detailed assessment and compare to the Center's stated process for conducting assessments.</i> <i>Review follow on actions resulting from the most recent Self-Declaration assessment. Were both areas of EMS weakness and noted deficiencies addressed?</i> <i>Was the report submitted to NASA HQ the full assessment or a summary?</i>	
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<i>NASA Environmental Management Review Checklist</i> <i>AZ2.1.8.3 External Recognition Programs</i>	
Question: What external recognition program(s) does the Center participate in? How does the program assess if the EMS is in place and viable?	
Description of Observation/Finding/Other Notes: <i>Assess if the external recognition program requires, or as a part of participation conducts, an independent assessment of the Center's EMS and the commitments therein.</i> <i>Examine the process for gaps between program conducted EMS assessments and Sections 2.0 to 7.0 above. If gaps exist, how do Center processes under Section 5.4 address these gaps?</i> <i>Does the program provide feedback on the state of the EMS to the Center and if so what does the Center do in reaction?</i> <i>How are results reported to Senior Management?</i>	
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NATIONAL ENVIRONMENTAL PERFORMANCE TRACK FORMS

<i>NASA Environmental Management Review Checklist</i> <i>AZ2.1.9.1 Environmental Policy</i>	
Question: Does the Center Environmental Policy require continuous improvement? Does the Policy commit to sharing environmental performance information with the community?	
Description of Observation/Finding/Other Notes: <i>Review the Center environmental policy.</i> <i>Discuss with Center staff areas (regulated and unregulated) where continuous improvement in environmental performance has occurred and is planned.</i> <i>Review environmental performance information and information on the Center EMS that has been shared with the community.</i>	
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NASA Environmental Management Review Checklist**AZ2.1.9.2 Planning****Question:**

How does the Center consider anticipated changes in activities, products and services in its review and update of aspects and impacts?

Is the Center subject to any Tribal requirements?

When objectives and targets are set, what is the full list of possible considerations?

Description of Observation/Finding/Other Notes:

Review the documentation and records associated with the review of aspects and impacts under section 3.1. Does the Center's EMS documentation call for consideration of anticipated changes and is this done?

If reviews are annual, are anticipated changes in the next year or more considered?

If the Center has determined as a part of it's legal and other requirements processes that tribal requirements exist, are they tracked, communicated etc. as other legal and other requirements in Section 3.2.

As part of the review the process by which objectives and targets are set under Section 3.3. Are the following considered when setting objectives and targets: preventing non-compliance, preventing pollution at its source, minimizing cross-media pollutant transfers, and improving environmental performance?

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<p align="center">NASA Environmental Management Review Checklist AZ2.1.9.3 Implementation and Operation</p>	
<p>Question: How are employees held accountable for and provided incentives related to meeting EMS requirements? How is responsibility for achieving objectives and targets of the overall EMS and compliance with legal requirements assigned? How does the Center accomplish public outreach and report on environmental performance?</p>	
<p>Description of Observation/Finding/Other Notes: <i>As part of interviews under Section 4.1, identify methods used by the Center to provide incentives to employees to meet EMS requirements and the means by which they are held accountable. This should include environmental staff, management, front line staff and the programs related to contractors in this area.</i> <i>Identify the defined individual assigned with ensuring objectives and targets are met. As they aware of their responsibilities in this area.</i> <i>Review how responsibility for meeting compliance with legal requirements is defined.</i> <i>Review records of Public Outreach activities. Discuss with environmental staff how the Center decides which activities to engage in and how potential audiences are selected?</i> <i>Review recent Center reports on environmental performance. Are reports produced on an annual basis and cover the performance summary for each of the environmental aspects reported under NEPT?</i></p>	
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<i>NASA Environmental Management Review Checklist</i> <i>AZ2.1.9.4 Checking and Corrective Action</i>	
Question: How has the Center tracked past environmental achievements? How is performance tracked now in association with continued performance improvement? Has the Center completed a full PDCA cycle including a third party EMS assessment?	
Description of Observation/Finding/Other Notes: <i>Review past processes to track achievements and associated results.</i> <i>Review current processes and plans for ongoing tracking of performance. Look for correlation with objectives and targets.</i> <i>Review previous EMS assessment and Management Review records to establish if the Center has completed a PDCA cycle with a fully operational EMS. Past EFR since the EMS was completed would be considered a third party assessment.</i>	
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<p align="center">NASA Environmental Management Review Checklist AZ2.1.9.5 Management Review</p>	
<p>Question: Does the management review process satisfy NEPT requirements including review relative to objectives and targets? Does the annual report that the Center continues to meet NEPT requirements?</p>	
<p>Description of Observation/Finding/Other Notes: <i>Has a documented management review of performance against the established objectives and targets and the effectiveness of the EMS in meeting policy commitments been conducted?</i></p> <p><i>Review the environmental performance report including performance against objectives and targets, and the summary of the results of compliance and EMS audits. Ensure that the Annual Performance Report includes the following categories of information:</i></p> <ul style="list-style-type: none"> • <i>Summary of the performance of the facility's EMS (based on objectives and targets), including a summary of the EMS and compliance audits performed and any corrective action taken.</i> • <i>Brief progress report on the facility's performance commitments.</i> • <i>Summary of the facility's environmental public outreach activities.</i> • <i>Self-certification that the Center continues to meet the Performance Track criteria."</i> 	
Reviewer Signature:	x Notes continued on other side Date:

ADDITIONAL FORMS

<i>NASA Environmental Management System Review Checklist</i> <i>AZ2.1.10.1 Additional</i>	
Question:	
How is the environmental office resourced from a personnel perspective?	
Are there any changes which should be made to the Environmental Staffing Model variables?	
Description of Observation/Finding/Other Notes:	
Reviewer Signature:	χ Notes continued on other side Date:

<p align="center"><i>NASA Environmental Management System Review Checklist</i> <i>AZ2.1.10.2 Additional</i></p>	
<p>Question:</p> <p>How are functions divided between civil servant and contractor environmental staff? How are inherently governmental functions delegated?</p>	
<p>Description of Observation/Finding/Other Notes:</p>	
<p>Reviewer Signature:</p>	<p>χ Notes continued on other side Date:</p>

NASA Environmental Management System Review Checklist AZ2.1.10.3 Additional	
Question: Is your environmental support contract fixed price, "cost", hybrid, or another type? How do you ensure adequate oversight of the environmental contractor?	
Description of Observation/Finding/Other Notes:	
Reviewer Signature:	χ Notes continued on other side Date:

NASA Environmental Management System Review Checklist AZ2.1.10.4 Additional	
Question: For line supervisors and line personnel who are directly responsible for programs or operations with environmental impact, how are these responsibilities integrated into the performance planning and evaluation process?	
Description of Observation/Finding/Other Notes:	
Reviewer Signature:	x Notes continued on other side Date:

<i>NASA Environmental Management System Review Checklist</i> <i>AZ2.1.10.5 Additional</i>	
Question:	
Description of Observation/Finding/Other Notes:	
Reviewer Signature:	χ Notes continued on other side Date:

<i>NASA Environmental Management System Review Checklist</i> <i>AZ2.1.10.6 Additional</i>	
Question:	
Description of Observation/Finding/Other Notes:	
Reviewer Signature:	χ Notes continued on other side Date:

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